SOLAR OBSERVATIONS

SOLAR AND SKY RADIATION MEASUREMENTS DURING MARCH, 1924

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For a description of instruments and exposures and an account of the method of obtaining and reducing the measurements, the reader is referred to the REVIEW for January, and February, 1924 **53**:42 and 113.

From Table 1 it is seen that solar radiation intensities averaged slightly below normal values for March at all three stations.

Table 2 shows that the total solar and sky radiation received on a horizontal surface averaged slightly above normal at Washington and below normal at Madison and Lincoln.

Skylight-polarization measurements made on six days at Washington give a mean of 55 per cent with a maximum of 63 per cent on the 24th. These are slightly below the average March values. At Madison no measurements were obtained as the ground was covered with snow throughout the month.

TABLE 1.—*Solar radiation intensities during March, 1924*

[Gram-calories per minute per square centimeter of normal surface]

Washington, D. C.

Date	8 a.m.	Sun's zenith distance								Noon
		78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	
	75th mer. time	Air mass									Local mean solar time
		A. M.					P. M.				
	e	5.0	4.0	3.0	2.0	[1]1.0	2.0	3.0	4.0	5.0	e
	mm.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm.*
Mar. 3	3.15				1.02						3.81
4	3.81		0.54	0.69	0.90						4.57
6	4.17			0.91							3.63
12	3.63					1.50	1.28				3.45
13	2.36	0.81	0.93	1.09	1.23		0.95				2.87
17	2.36		0.87	0.98	1.17	1.39					2.87
19	3.81		0.70	0.90	1.21		0.96				3.00
22	4.57			1.03	1.18	1.36					4.17
24	4.17			1.04	1.24	1.53					6.50
28	3.99		0.70	0.84	1.09	1.41					3.99
31	3.30	0.59	0.73	0.90	1.11	1.36	1.04				3.45
Means		(0.70)	0.74	0.93	1.13	1.42	1.06				
Departures		−0.01	−0.07	−0.01	−0.02	±0.00	−0.05				

TABLE 1.—*Solar radiation intensities during March, 1924*—Contd

Madison, Wisconsin

Date	8 a.m.	Sun's zenith distance								Noon
		78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	
	75th mer. time	Air mass									Local mean solar time
		A. M.					P. M.				
	e	5.0	4.0	3.0	2.0	[1]1.0	2.0	3.0	4.0	5.0	e
	mm.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm.*
Mar. 5	2.26		1.02	1.13	1.30						2.74
13	2.95				1.30						3.30
14	1.78				1.37						2.16
15	1.45				1.32	1.54					2.62
18	3.00						1.31	1.16			3.30
27	4.57						1.26				6.76
Means			(1.02)	(1.13)	1.32		(1.28)	(1.16)			
Departures			−0.02	−0.06	±0.00		−0.03	±0.00			

Lincoln, Nebr.

Mar. 6	2.87	1.02			1.38	1.53					2.36
11	2.36		0.97	1.13	1.32	1.52	1.32	1.13	0.96	0.84	2.62
21	3.45			0.98	1.20	1.51	1.19	0.92			3.99
26	3.81		0.91	1.11	1.29	1.49	1.30	1.14	0.99		4.95
27	4.17		0.87	1.08	1.18		1.20	0.99	0.83		7.57
Means		(1.02)	0.92	1.08	1.27		1.25	1.04	0.93	(0.84)	
Departures		+0.14	−0.01	±0.00	−0.02		−0.02	−0.03	+0.01	+0.05	

[1] Extrapolated

TABLE 2.—*Solar and sky radiation received on a horizontal surface*

Week beginning—	Average daily radiation				Average daily departure for the week			Excess or deficiency since first of year		
	Chicago	Washington	Madison	Lincoln	Washington	Madison	Lincoln	Washington	Madison	Lincoln
	cal.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Feb. 26	158	290	224	334	+8	−60	−9	+643	−1,329	−379
Mar. 5	124	228	286	372	−82	−23	+4	+68	−1,488	−351
12	200	483	372	288	+143	+46	−106	+1,072	−1,169	−1,095
19	197	376	228	377	+15	−117	−38	+1,179	−1,985	−1,359
26	153	314	296	443	−63	−66	+14	+735	−2,445	−1,261

WEATHER OF NORTH AMERICA AND ADJACENT OCEANS

551.506 (261.1)

NORTH ATLANTIC OCEAN

By F. A. YOUNG

The following table shows the average pressure for the month at a number of land stations on the coast and islands of the North Atlantic. The readings are for 8 a. m., 75th meridian time, and the departures are only approximate, as the normals were taken from the Pilot Chart and are based on Greenwich mean noon observations, which correspond to 7 a. m., 75th meridian time.

Station	Average pressure	Departure
	Inches	*Inches*
St. Johns, Newfoundland	29.48	−0.36
Nantucket	29.71	−0.29
Hatteras	29.85	−0.17
Key West	29.97	−0.05
New Orleans	29.98	−0.04
Swan Island	29.87	−0.12
Turks Island	30.02	±0.00
Bermuda	29.84	−0.20
Horta, Azores	29.65	−0.49
Lerwick, Shetland Islands	29.84	+0.13
Valencia, Ireland	29.78	−0.12
London	29.89	−0.07

It will be noticed that the average pressure at Horta, Azores, was very much below the normal for March; the barometer at that station read above 30 inches only on the 1st and the 28th to 31st, while the lowest reading, 29.20 inches, occurred on the 9th. During the greater part of the month the North Atlantic HIGH was conspicuous by its absence, and the persistent intrusion of low pressure over the region usually occupied by this so-called center of action was responsible for abnormal weather conditions over a large section of the ocean.

Judging from reports received, the number of days on which winds of gale force were reported over the greater part of the steamer lanes was not far from the normal as shown on the Pilot Chart. Over the western section of the ocean and in southern waters, west of the Azores, gales were unusually prevalent, while east of the 25th meridian comparatively moderate weather was the rule.

The number of days with fog was apparently less than usual over the Grand Banks, and about normal in the vicinity of the European and American coasts. A most